

## Claims

- [c1] 1.A patient support system for a medical imaging system, comprising:  
a lateral rail structure attachable to a receptor of the medical imaging system;  
and  
a patient support movably coupled to the lateral rail structure via a rail guide structure.
- [c2] 2.The patient support system of claim 1, wherein the lateral rail structure has a curvilinear path.
- [c3] 3.The patient support system of claim 2, wherein the curvilinear path is convex.
- [c4] 4.The patient support system of claim 1, wherein the rail guide structure is releasably coupled to the lateral rail structure via a releasable latch.
- [c5] 5.The patient support system of claim 1, wherein the patient support is positionally securable along the lateral rail structure via a friction-based mechanism activated by a patient load applied to the patient support.
- [c6] 6.The patient support system of claim 1, wherein the patient support is continuously movable and securable along the lateral rail structure.
- [c7] 7.The patient support system of claim 1, wherein the patient support is a patient limb support.
- [c8] 8.The patient support system of claim 1, wherein the patient support is a patient extremity support.
- [c9] 9.The patient support system of claim 8, wherein the patient support is adapted to position patient extremity in a non-obstructive location relative to the receptor.
- [c10] 10.The patient support system of claim 1, wherein patient support comprises a plurality of hand grips.
- [c11] 11.The patient support system of claim 10, wherein the plurality of hand grips are disposed at different vertical positions.

- [c12] 12.A patient support for an imaging system, comprising:  
a curvilinear rail structure attachable to, and movable with, a radiographic receptor of the imaging system; and  
a limb support slidingly coupled to the curvilinear rail structure.
- [c13] 13.The patient support of claim 12, wherein the curvilinear rail structure has a convex path.
- [c14] 14.The patient support of claim 12, comprising a releasable latch structure coupling the limb support to the curvilinear rail structure.
- [c15] 15.The patient support of claim 12, wherein the limb support is positionally securable along the curvilinear rail structure via a holding mechanism activated by weight of a patient limb supported by the limb support.
- [c16] 16.The patient support of claim 12, wherein the limb support is continuously movable and securable along the curvilinear rail structure.
- [c17] 17.The patient support of claim 12, wherein the limb support is adapted to position a patient limb in a non-obstructive location relative to the radiographic receptor.
- [c18] 18.The patient support of claim 12, wherein limb support comprises a hand grip.
- [c19] 19.The patient support of claim 12, wherein limb support comprises a wrist support.
- [c20] 20.The patient support of claim 12, wherein the limb support comprises a plurality of lateral support members disposed at different vertical positions.
- [c21] 21.A medical imaging system, comprising:  
a radiographic receptor;  
a rail structure coupled to the radiographic receptor; and  
a patient extremity support slidingly coupled to the rail structure.
- [c22] 22.The medical imaging system of claim 21, wherein the radiographic receptor is a digital detector assembly.

- [c23] 23.The medical imaging system of claim 21, wherein the radiographic receptor is coupled to a positioning system.
- [c24] 24.The medical imaging system of claim 21, wherein the rail structure is coupled to an upper rear portion of the radiographic receptor.
- [c25] 25.The medical imaging system of claim 21, wherein the rail structure has a curvilinear path.
- [c26] 26.The medical imaging system of claim 25, wherein the curvilinear path is convex.
- [c27] 27.The medical imaging system of claim 25, wherein the patient extremity support tiltingly slides along the rail structure with the curvilinear path.
- [c28] 28.The medical imaging system of claim 21, comprising a releasable latch structure coupling the patient extremity support to the rail structure.
- [c29] 29.The medical imaging system of claim 21, wherein the patient extremity support is frictionally securable along the rail structure via a holding mechanism activated by weight of a patient extremity supported by the patient extremity support.
- [c30] 30.The medical imaging system of claim 21, wherein the patient extremity support is movable in infinitesimal increments along the rail structure.
- [c31] 31.The medical imaging system of claim 21, wherein the patient extremity support is adapted to position a patient limb in a non-obstructive location relative to the radiographic receptor.
- [c32] 32.A method of supporting a patient limb during image acquisition by a medical imaging system, comprising the acts of:  
sliding a limb support along a rail structure coupled to, and movable with, a radiographic receptor of the medical imaging system; and  
securing the limb support in a desired position along the rail structure.
- [c33] 33.The method of claim 32, wherein the act of sliding the limb support along the rail structure comprises the act of sliding the limb support along a

curvilinear path.

- [c34] 34. The method of claim 33, wherein the curvilinear path is convex.
- [c35] 35. The method of claim 32, wherein the act of sliding the limb support along the rail structure comprises the act of moving the limb support in infinitesimal increments.
- [c36] 36. The method of claim 32, wherein the act of securing the limb support in the desired position comprises the act of frictionally securing the limb support.
- [c37] 37. The method of claim 36, wherein the act of frictionally securing the limb support is activated by performing the act of supporting the patient limb on the limb support.
- [c38] 38. The method of claim 32, wherein the act of securing the limb support in the desired position comprises the act of positioning a patient limb in a non-obstructive location relative to the radiographic receptor.
- [c39] 39. A method of forming a laterally adjustable limb support for a medical imaging system, comprising the acts of:  
providing a lateral rail structure attachable to a receptor of the medical imaging system; and  
slidingly coupling a limb support to the lateral rail structure.
- [c40] 40. The method of claim 39, wherein the lateral rail structure has a curvilinear path.
- [c41] 41. The method of claim 40, wherein the curvilinear path is convex.
- [c42] 42. The method of claim 39, comprising the act of providing a vertical release mechanism to facilitate vertical release of the limb support from the lateral rail structure.
- [c43] 43. The method of claim 39, comprising the act of providing a friction-based securement mechanism to secure the limb support at a desired position along the lateral rail structure.

- [c44] 44.The method of claim 43, wherein the act of providing a friction-based securement mechanism comprises the act of creating a holding force between the limb support and the receptor as a patient load is applied to the limb support.
- [c45] 45.A patient support structure for a medical imaging system, comprising:  
patient support means for supporting a patient extremity; and  
sliding attachment means for coupling the patient support means to a receptor of the medical imaging system.
- [c46] 46.The patient support structure of claim 45, wherein the sliding attachment means have a substantially linear path.
- [c47] 47.The patient support structure of claim 45, wherein the sliding attachment means have a curvilinear path.
- [c48] 48.The patient support structure of claim 45, comprising support releasing means for releasing the patient support means from the sliding attachment means.
- [c49] 49.The patient support structure of claim 45, comprising support securing means for removably securing the patient support means to the sliding attachment means.